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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,026

02/26/2004

Masato Suga

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21171

7590

01/24/2006

STAAS & HALSEY LLP

SUITE 700

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EXAMINER

SMOOT, STEPHEN W

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,026

Applicant(s)

SUGA ET AL.

Examiner

Stephen W. Smoot

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004 and 19 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2-26-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to application papers filed on 26 February 2004 and to applicant's election filed on 19 October 2005.

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-7, and cancellation of the non-elected claims 8-15 in the reply filed on 19 October 2005 is acknowledged.

Drawings

2. Figure 4C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see page 15, lines 3-7, 15-17). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the

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examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Semiconductor Device that Includes Plural Types of Dummy Patterns on a Wiring Layer.

4. The disclosure is objected to because of the following informalities:

On page 12, line 22, change "step 5" to --step S5'-- because Fig. 8 includes a step S5', but not a step 5'; and

On page 13, line 12, change "step 5" to --step S5'-- because Fig. 8 includes a step S5', but not a step 5'.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Motoyama et al. (US 6,099,992).

Referring to Fig. 7A and column 9, lines 16-60, Motoyama et al. disclose a reticle for forming both dummy patterns and interconnection patterns on a semiconductor substrate that includes $1.65\text{ }\mu\text{m}$ by $1.65\text{ }\mu\text{m}$ square dummy patterns as well as dummy pattern E, which has essentially the same length ($1.63\text{ }\mu\text{m}$) and a narrower width ($0.54\text{ }\mu\text{m}$). These are all of the limitations set forth in claims 1-7 of the applicant's invention.

7. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozawa et al. (US 2002/0063335 A1).

Referring to Fig. 12C and paragraphs [0103] to [0115], Ozawa et al. disclose a wire layout corresponding to a semiconductor integrated circuit that includes wires (108, 109, 110) and dummy patterns (113). The dummy patterns (113) include different sizes and shapes with squares as the largest dummy patterns (i.e. the patterns next to wire 108). Other dummy patterns (i.e. the patterns next to wire 109) are rectangles with the same length as the squares, but having narrower widths. These are all of the limitations set forth in claims 1-7 of the applicant's invention.

8. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (US 2003/0034567 A1).

Referring to Fig. 2 and paragraphs [0029] to [0039], Sato et al. disclose a semiconductor device with a wiring level that includes wiring layers (70, 71) and square dummy patterns (30). Some of the dummy patterns (30) located at the edge of element forming region (1100) are truncated as shown in Fig. 2 and, accordingly, are shaped like rectangles with the same length as the squares, but having narrower widths. These are all of the limitations set forth in claims 1-7 of the applicant's invention.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chao et al., Ushiyama, Kawashima et al., Kling et al., and Schmidt et al. teach dummy structures that feature plural types of dummy patterns with different sizes.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00 am to 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SWS


STEPHEN W. SMOOT
PRIMARY EXAMINER